EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER

59042460

PUBLICATION DATE

09-03-84

APPLICATION DATE

01-09-82

APPLICATION NUMBER

57150690

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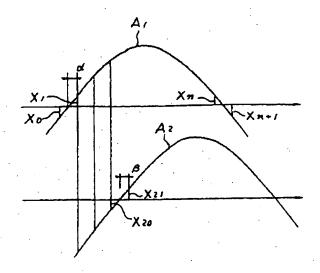
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INT.CL.

G01R 25/00

TITLE

PHASE DETECTING DEVICE



$$\alpha = \theta \times \frac{|X_1|}{|X_0| + |X_1|} \qquad \beta = \theta \times \frac{|X_{21}|}{|X_{20}| + |X_{21}|}$$

ABSTRACT :

PURPOSE: To detect a phase difference with high accuracy, by sampling two AC inputs from the same electric power source system, and using sampling values before and after zero-crossing of the AC inputs and a phase difference between each sampling.

CONSTITUTION: Two AC inputs inputted from the same electric power source system are sampled by a prescribed sampling frequency, and are converted to digital values. A negative sampling value X₀ and a positive sampling value X₁ in case when the input A₁ is changed to positive from negative for to its polarity are derived, and in the same way, a negative sampling value X₂₀ and a positive sampling value X₂₁ of the input A₂ are derived. Subsequently, a sampling number N₀ extending from the sampling value X₁ of the input A₁ to the negative sampling value X₂₀ of the input A₂ is counted. Subsequently, a phase difference θ between each sampling in the actual power supply frequency is derived, phase difference α , β are derived by use of the sampling values X_0 , X_1 , X_{20} and X_{21} and the phase difference θ ; the phase difference between two inputs is detected.

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